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L9: Entry 1 of 1 File: DWPI Mar 30, 1979

DERWENT-ACC-NO: 1979-90756B
DERWENT-WEEK: 197950

TITLE: D-glucose-isomerase microbiological prodn. - using specified Lactobacillus bravis as producer for high yield high activity prod.

INVENTOR: BEZBORODOV, A M; TULEUOVA, E T ; ULEZLO, I V

PATENT-ASSIGNEE:

ASSIGNEE	CODE
BIOCHEM INST	BIOCR

PRIORITY-DATA: 1977SU-2470106 (March 31, 1977)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
SU 654682 A	March 30, 1979		000	

INT-CL (IPC): C12D 13/10; C12K 1/02

ABSTRACTED-PUB-NO: SU 654682A
BASIC-ABSTRACT:

Lactic flora bacterial strain: Lactobacillus brevis -74 is used as D-glucose-isomerase producer to obtain high yields of the enzyme. The enzyme is used as additive to glucose-contg. syrups, in dietary fructose prodn. (used by diabetic patients) and in confectionery industry. The producer strain is described as new.

The strain is cultured in a culture medium compsn. contg. (in g/l): xylose 15; glucose 1; peptone 20; sodium acetate 10; cobalt chloride 0.1, malt extract 2.5% (by vol.) tap water 1 l. the culture medium has pH 6.5.

The culturing is conducted, using 5% 1 day culture for inoculation, for 18-20 hrs. with aeration. The enzyme can convert 65% of glucose to fructose in 2-3 hrs.

TITLE-TERMS: GLUCOSE ISOMERASE MICROBIOLOGICAL PRODUCE SPECIFIED LACTOBACILLUS PRODUCE HIGH YIELD HIGH ACTIVE PRODUCT

DERWENT-CLASS: D16 D17

CPI-CODES: D05-C03; D05-C08; D05-H04; D06-G;

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L11: Entry 12 of 17 File: JPAB Sep 24, 1996

PUB-NO: JP408245397A
DOCUMENT-IDENTIFIER: JP 08245397 A
TITLE: AUTOCRINE-MOTILITY-FACTOR ACTIVE INHIBITOR COMPRISING GLUCOSE-6-PHOSPHATE ISOMERASE INHIBITOR

PUBN-DATE: September 24, 1996

INVENTOR-INFORMATION:
NAME COUNTRY
WATANABE, HIDEOMI
TAKEHANA, KENJI
DATE, MASAYO
KOBAYASHI, MIKI
ABURAHAMU, RATSUTSU

ASSIGNEE-INFORMATION:
NAME COUNTRY
AJINOMOTO CO INC

APPL-NO: JP07344648
APPL-DATE: November 24, 1995

INT-CL (IPC): A61 K 31/70; A61 K 31/70; A61 K 31/66; A61 K 45/00; C07 F 9/09; C07 H 11/04; C12 N 9/99

ABSTRACT:

PURPOSE: To obtain the subject inhibitor useful for treating and preventing humectation and metastasis of a cancer cell causing worsening of one's condition by sthenia of motor ability of cell or diseases such as chronic rheumatism and arteriosclerosis.

CONSTITUTION: This inhibitor comprises a glucose-6-phosphate isomerase (preferable example: 6-phosphogluconic acid or erythrose-4-phosphoric acid) which is one of glycolytic ferments which widely exists ranging from microorganisms to higher animals and plants. The dose of the inhibitor is normally daily 0.5mg/kg to 20g/kg and the inhibitor can be administered also by any of oral and parenteral administration and prepared in formulation of tablet, powdery preparation, injection, etc. Furthermore, glucose-6-phosphate isomerase and autocrine-motility-factor are common in not only both amino acid sequences, but also positions manifesting the both activities and there is quantitatively and qualitatively strong correlation between the both.

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L10: Entry 34 of 42 File: JPAB Oct 27, 1998

PUB-NO: JP410287575A
DOCUMENT-IDENTIFIER: JP 10287575 A
TITLE: ANTIOBESTIC DRUG

PUBN-DATE: October 27, 1998

INVENTOR-INFORMATION:

NAME	COUNTRY
YAMAHARA, JOJI	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
RANKA AAYURUBEEDICK HAABU YAKUHIN KK	

APPL-NO: JP09108130
APPL-DATE: April 9, 1997

INT-CL (IPC): A61 K 35/78; A61 K 31/70

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain an antiobestic drug that can inhibit the increase in blood sugar with a reduced amount of ingestion without side-effect by admixing a crude drug selected from a dry powder, an aqueous extract and alcohol extract obtained from D-xylose and a specific naturally occurring substance.

SOLUTION: This antiobestic preparation is prepared by formulating D-xylose that has inhibitory action on enzymes hydrolyzing oligosaccharides, a crude drug having inhibitory action on absorption of oligosaccharides and monosaccharides from intestinal tracts. This crude drug is, for example, the root bark, tree bark and buds of Japanese angelica tree, root of beet, root of spinach, root of Achyranthes japonica, root of Swiss chard, seeds of Kochia scoparia and conker, laves of Gymnema sylvestre R. Br. and fruits and seeds of Momordica Charantia and they are dried and powdered or extracted with water or an alcohol and these extracts are used. One pt.wt. of d-xylose is mixed with 1-3 pts.wt. of the crude drug and prepared to a powdery or solid preparation or a solution preparation. The daily dose of this drug is orally 50-300 mg for adult.

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L3: Entry 15 of 15 File: DWPI

DERWENT-ACC-NO: 1971-69250S
DERWENT-WEEK: 197143

TITLE: Fruit sugar contg sweetener compn fromstarch

PATENT-ASSIGNEE:

ASSIGNEE	CODE
NIHON SHIRYOKOGYO KK	NIS N

PRIORITY-DATA: 1964JP-0014872 (March 16, 1964)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 71037231 B			000	

INT-CL (IPC): A23L 0/00; C13K 0/00

ABSTRACTED-PUB-NO: JP71037231B
BASIC-ABSTRACT:

Sweetening compsn. is produced by adding glucamylase and glucose-isomerase or fungi contg. glucose-isomerase to a liquid produced by liquefying starch to bring about hydrolysis and a grape sugar isomerising reaction simultaneously to produce a highly pure isomerised sugar sweetening material comprising grape sugar and fruit.

TITLE-TERMS: FRUIT SUGAR CONTAIN SWEET

DERWENT-CLASS: D13 D17

CPI-CODES: D03-H01; D06-G;

WEST

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L3: Entry 14 of 15 File: DWPI Apr 7, 1976

DERWENT-ACC-NO: 1976-38925X
DERWENT-WEEK: 197621

TITLE: Invert sugar prodn. - by treating grape sugar soln. with a chelating agent and fermenting with glucose isomerase and Streptomyces olivochromoge nes

PATENT-ASSIGNEE:

ASSIGNEE	CODE
CPC INT INC	CORP

PRIORITY-DATA: 1974JP-0113999 (October 4, 1974)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 51041451 A	April 7, 1976		000	
CA 1060824 A	August 21, 1979		000	
JP 81049119 B	November 19, 1981		000	

INT-CL (IPC): C12D 13/04; C12P 19/24; C13K 11/00

ABSTRACTED-PUB-NO: JP51041451A
BASIC-ABSTRACT:

Invert sugas is produced by treating a soln. containing grape sugar as raw material with a chelate reagent such as ethylene-diamine tetraacetate (EDTAe nitrilo-triacetate (NTA), or diethylenetriamine-pentac etate (DTPA) and fermenting the resulting soln. with glucose isomerase and Streptomyces olivochromogenes. A syrup containing glucose is obtd.

TITLE-TERMS: INVERT SUGAR PRODUCE TREAT GRAPE SUGAR SOLUTION CHELATE AGENT FERMENTATION GLUCOSE ISOMERASE STREPTOMYCES

DERWENT-CLASS: D16 D17 E13

CPI-CODES: D05-C08; D06-G; E10-A07;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
K0 H4 M311 M313 M314 M315 M332 M321 M280 M342
M340 M344 M380 M391 M392 L810 J451 J471 H482 H483
H484 J581 M620 N000 N340 N040 H404 H405 Q241 M510
H8 M520 M530 M540 M720 M416 M902

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L3: Entry 13 of 15 File: DWPI Mar 18, 1977

DERWENT-ACC-NO: 1977-26426Y
DERWENT-WEEK: 197715

TITLE: Purifying grape and fruit sugar soln. contg. boric acid or borates - using a hydrogen sulphite or sulphite type impregnated anion exchange column

PATENT-ASSIGNEE:

ASSIGNEE	CODE
AGENCY OF IND SCI & TECHNOLOGY	AGEN

PRIORITY-DATA: 1971JP-0043466 (June 17, 1971)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 77009740 B	March 18, 1977		000	

INT-CL (IPC): C13K 1/00

ABSTRACTED-PUB-NO: JP77009740B
BASIC-ABSTRACT:

A soln. contg. grape sugar and fruit sugar together with boric acid or borate salt is purified by passing it through a hydrogen sulphite type or sulphite type anion exchange resin.

This process removes the boric acid or borate salt added when isomerising the grape sugar into the fruit sugar using glucose isomerase as an enzyme. A purified fruit sugar is obtd.

TITLE-TERMS: PURIFICATION GRAPE FRUIT SUGAR SOLUTION CONTAIN BORIC ACID HYDROGEN SULPHITE SULPHITE TYPE IMPREGNATE ANION EXCHANGE COLUMN

DERWENT-CLASS: D16 D17 E13

CPI-CODES: D06-G; E10-A07;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
J6 H4 M315 M332 M321 M280 M344 M380 M391 J451
J471 H482 H483 H484 M620 N160 H404 H405 Q241 M510
H8 M520 M530 M540 M720 M416 M902

Chemical Indexing M3 *02*
Fragmentation Code
H4 J5 M311 M313 M314 M332 M321 M280 M342 M340
M344 M380 M392 H482 H483 H484 J581 M620 N160 H404
H405 Q241 M510 H8 M520 M530 M540 M720 M416 M902

WEST

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L3: Entry 12 of 15 File: DWPI Mar 7, 1988

DERWENT-ACC-NO: 1988-102486
DERWENT-WEEK: 198815

TITLE: Prodn. of fruit sugar - using new glucose-isomerase from Bifidobacterium bacteria

PATENT-ASSIGNEE:

ASSIGNEE	CODE
YK NONOGAWA SHOJI	NONON

PRIORITY-DATA: 1986JP-0194453 (August 20, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 63052887 A	March 7, 1988		003	
JP 95095959 B2	October 18, 1995		002	C12P019/24

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP63052887A	August 20, 1986	1986JP-0194453	
JP95095959B2	August 20, 1986	1986JP-0194453	
JP95095959B2		JP63052887	Based on

INT-CL (IPC): C12N 9/92; C12P 19/24; C12R 1/01

ABSTRACTED-PUB-NO: JP63052887A
BASIC-ABSTRACT:

Fruit sugar is produced from grape sugar, using Bifidobacterium bacteria cultured or its processed prod. The bacteria may be Bifidobacteri um longum, B. adrescentes, B.infantes, B. bifidus, B.breve, B. liberolum.

USE/ADVANTAGE - Bifidobacterium bacteria have glucoseisomerase activity and these do not require metal ions (Mg, Mn, Co ion) for expression of the activity. Xylose or xylane is not necessary for culture of the bacteria. The bacteria can be converted grape sugar of an extremely low concn. (about 3mM or less) and the intended fruit sugar.

In an example, polypeptone (30g), grape sugar (30g), yeast extract (12g), salt (10g), MgSO47H2O (1g) were dissolved in water (2 litres), and pH was adjusted to 7.2, and marble (30g) was added and sterilised under pressure at 121 deg.C for 20 minutes in an autoclave. After cooled, Bifidobacterium adrescents was inoculated to the medium and cultured for 20 hours at 37 deg.C. After cultivation, the bacteria were collected by centrifugation and triturated. The enzyme soln. (gluco isomerase 200 units) was blended with grape sugar (20g) and the whole was made 100 ml with water. The reaction system was reacted for 16 hours at 37 deg.C, and as a result fruit sugar (6g) was obtd.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: PRODUCE FRUIT SUGAR NEW GLUCOSE ISOMERASE BIFIDOBACTERIUM BACTERIA

DERWENT-CLASS: D16 D17 E17

CPI-CODES: D05-A02E; D05-C08; D06-B; E10-A07;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
H4 H405 H484 H8 J5 J581 K0 L8 L818 L821
L831 M280 M311 M314 M321 M332 M342 M344 M349 M381
M392 M416 M620 M720 M903 M904 M910 N131 N425 N513
Q241
Specfic Compounds
00134P
Registry Numbers
3102R

UNLINKED-DERWENT-REGISTRY-NUMBERS: 0134P

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1988-046151

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L3: Entry 10 of 15 File: USPT Oct 26, 1982

DOCUMENT-IDENTIFIER: US 4356195 A
TITLE: Fruit juices having a depressed freezing point

Brief Summary Text (1):
According to the present invention improved fruit juices containing increased levels of fructose are obtained by the enzymatic conversion of other sugars into fructose. According to one embodiment of the invention the sucrose in fruit juices is enzymatically cleaved to generate equal molar quantities of glucose and fructose. This reaction is conveniently accomplished with the enzyme invertase (beta fructofuranosidase). According to another embodiment of the invention the glucose present in fruit juices is enzymatically isomerized into fructose using the enzyme glucose isomerase.

Detailed Description Text (2):
The present invention depends upon the enzymatic conversion of natural sugars contained in fruit juices into fructose. For example naturally present sucrose may be enzymatically converted into glucose and fructose using the enzyme invertase. Similarly naturally present glucose may be enzymatically converted into fructose using glucose isomerase. The former reaction involves the hydrolysis of sucrose according to the following equation: ##EQU1##

Detailed Description Text (8):
Juices, the glucose of which may be effectively isomerized according to the present invention include those juices having greater than 2% glucose based on the weight of the fresh fruit. Such juices may include without limitation orange juice, blackberry juice, grape juice, pineapple juice, apple juice, apricot juice, cranberry juice and plum juice.

CLAIMS:

11. Method according to claim 10 wherein said enzyme is glucose isomerase.

14. Process according to claim 13 wherein said fruit juice is selected from the group consisting of grape juice, pineapple juice, apple juice, blackberry juice, plum juice, cranberry juice and apricot juice.

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L3: Entry 9 of 15 File: USPT Dec 7, 1982

DOCUMENT-IDENTIFIER: US 4362757 A
TITLE: Crystallized, readily water dispersible sugar product containing heat sensitive, acidic or high invert sugar substances

Detailed Description Text (26):
150 grams of grape juice concentrate (68.degree. Brix) was mixed with 350 grams of sugar (Bakers Special Grade) to form a slurry. The process continued as in Example 5. The grape juice incorporated product can be used in a grape jelly mix formulation by dry blending with 10.7 grams of pectin.

Detailed Description Text (35):
In another embodiment, a dry enzyme product or an active culture is produced by incorporating an enzyme, such as invertase, cellulose, glucose, isomerase, amylase, catalase, glucose oxidase, lactase, or pectinase, or an active culture, into a sugar matrix. Notwithstanding the high temperature of the process, the enzyme remains in its active form.

Detailed Description Text (38):
In another embodiment, a natural colorant, such as annatto extracts, beet juice concentrates, beta-carotene, grape skin extracts, oleoresin paprika, or tumeric extracts, is incorporated into a sugar matrix. The incorporated product is a homogeneous, stable, dry powder which shows no loss of color strength or hue and which can be used in dry blend formulations.

Detailed Description Paragraph Table (1):
TABLE I

Honey Flavored Sugar Incorporated Sugar Incorporated Sugar Invertase Product Grape Juice Product

First-Stage Operation: (Premix Preparation) Composition Honey/Sugar Liquid Grape Juice Invertase/Sugar Concentrate (68.degree. Brix)/Sugar (Wt. Ratio) (1/1) (1/9) (3/7) Second-Stage Operation: Composition Premix/Sugar Premix/Sugar Premix/Sugar (Wt. Ratio) (2/3) (1/1) (1/1) Elevated Temperature 285.degree. F. 270.degree. F. 290.degree. F. Solids Content Of Supersaturated Solution 98.1 97.0 98.5 (Wt. %) Finished Product Analysis Sucrose (Wt. %) 79.5 94.8 88.65 Invert Sugar Content (Wt. %) 17.2 0.13 9.12 Moisture Content (Wt. %) 0.75 0.45 0.65 Screen Analysis (%) No. 28 28.5 18.2 25.8 No. 35 21.7 17.0 24.5 No. 48 25.6 20.5 20.5 No. 65 12.5 17.8 17.6 No. 100 8.6 12.4 9.5 No. 200 2.5 10.0 1.6 Pan 0.6 4.1 0.5

CLAIMS:

9. The crystallized sugar product of claim 7 wherein the fruit juice is grape juice.

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L10: Entry 42 of 42 File: DWPI Oct 16, 1989

DERWENT-ACC-NO: 1989-345129
DERWENT-WEEK: 198947

TITLE: Oral compsn. for preventing signs of ageing including baldness - comprises chitin, chitosan, hydrolysing enzymes organic acid Gymnema sylvestre and hemi:cellulose of Plantag

PATENT-ASSIGNEE:

ASSIGNEE	CODE
TANAKA Y	TANAI

PRIORITY-DATA: 1988JP-0085740 (April 7, 1988)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 01258623 A	October 16, 1989		007	

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP01258623A	April 7, 1988	1988JP-0085740	

INT-CL (IPC): A21D 3/00; A23G 3/00; A23L 1/10; A23L 2/38; A61K 7/06; A61K 31/73

ABSTRACTED-PUB-NO: JP01258623A
BASIC-ABSTRACT:

A food, drug or beverage compsn. which stimulates hair growth and blood circulation and prevents baldness contains chitin and chitosan together with hydrolysing enzymes, organic acid, Gymnema sylvestre and Isagol (hemicellulose of Plantag).

USE/ADVANTAGE - Unlike conventional hair dyes with potential carcinogenici ty, this compsn. prevents ageing symptoms including inhibiting abnormal and pathogenic enterobacterial growth, stimulating blood circulation,and decreasing blood sugar and cholesterol. It is used orally as a hair growth stimulant.

In an example, the healthy beverage compsn. (I) comprised 2g of chitosan powder, 4g of ascorbic acid and 50g of water. Drinking of compsn. (I) of 10g diluted to 50 to 70g with water for 6 months turned white hair black by 80 to 90%.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: ORAL COMPOSITION PREVENT SIGN AGE BALD COMPRISE CHITIN CHITOSAN HYDROLYSIS ENZYME ORGANIC ACID GYMNEMA SYLVESTRE HEMI CELLULOSE

DERWENT-CLASS: B04 D13 D21

CPI-CODES: B03-F; B04-A07F2; B04-B02C3; B04-C02A; B04-C02E3; B12-A01; B12-E01; B12-H03; B12-H05; B12-L05; D03-H01G; D03-H01T; D08-B03; D08-B06;

CHEMICAL-CODES:

Chemical Indexing M1 *01*
Fragmentation Code
J0 J011 J3 J321 K0 L8 L814 L834 M210 M211
M262 M281 M320 M423 M431 M782 M903 P220 P814 P816
P930 Q211 Q220 V735
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M1 *02*
Fragmentation Code
H1 H100 H121 K0 L8 L814 L834 M423 M431 M782
M903 P220 P814 P816 P930 Q211 Q220 V735
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M1 *03*
Fragmentation Code
M423 M431 M782 M903 P220 P814 P816 P930 Q211 Q220
V802 V814 V815
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M1 *04*
Fragmentation Code
M423 M431 M782 M903 P220 P814 P816 P930 Q211 Q220
V400 V406
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M1 *05*
Fragmentation Code
M423 M431 M782 M903 P220 P814 P816 P930 Q211 Q220
V711
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *06*
Fragmentation Code
F012 F013 F014 F015 F113 H4 H403 H421 H482 H8
J5 J522 K0 L8 L818 L821 L832 L9 L942 L960
M280 M312 M321 M332 M343 M373 M391 M413 M431 M510
M521 M530 M540 M782 M903 M904 M910 P220 P814 P816
P930 Q211 Q220 V0 V330
Specfic Compounds
00035M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *08*
Fragmentation Code
J0 J011 J1 J171 M210 M211 M262 M281 M320 M416
M431 M620 M782 M903 M904 M910 P220 P814 P816 P930
Q211 Q220
Specfic Compounds
00247M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *09*
Fragmentation Code
H4 H402 H482 H8 J0 J012 J1 J172 M280 M312
M321 M332 M344 M349 M381 M391 M416 M431 M620 M782
M903 M904 M910 P220 P814 P816 P930 Q211 Q220

Specfic Compounds
00540M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *10*
Fragmentation Code
H4 H401 H481 H8 J0 J012 J1 J172 M280 M312
M321 M332 M343 M349 M381 M391 M416 M431 M620 M782
M903 M904 M910 P220 P814 P816 P930 Q211 Q220
Specfic Compounds
01656M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *11*
Fragmentation Code
J0 J012 J1 J172 M280 M312 M321 M332 M342 M382
M391 M416 M431 M620 M782 M903 M904 M910 P220 P814
P816 P930 Q211 Q220
Specfic Compounds
00900M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *12*
Fragmentation Code
H7 H721 J0 J012 J1 J172 M280 M312 M321 M332
M342 M382 M391 M416 M431 M782 M903 M904 M910 P220
P814 P816 P930 Q211 Q220
Specfic Compounds
00902M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *13*
Fragmentation Code
H1 H100 H181 J0 J012 J1 J172 M280 M313 M321
M332 M343 M349 M381 M391 M416 M431 M620 M782 M903
M904 M910 P220 P814 P816 P930 Q211 Q220
Specfic Compounds
00116M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *14*
Fragmentation Code
F012 F013 F014 F016 F121 J5 J522 J581 L9 L942
M210 M211 M240 M262 M281 M320 M413 M431 M510 M521
M530 M540 M782 M903 M904 M910 P220 P814 P816 P930
Q211 Q220
Specfic Compounds
01320M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *15*
Fragmentation Code
H7 H724 J0 J011 J1 J171 M210 M215 M231 M262
M281 M320 M416 M431 M782 M903 M904 M910 P220 P814
P816 P930 Q211 Q220
Specfic Compounds
00903M
Registry Numbers
1704X 1724X 1711X 1714X 89290 1327U 0502U

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Chemical Indexing M2 *16*
    Fragmentation Code
    H4   H401 H481 H8   J0   J013 J1   J173 M280 M313
    M321 M332 M344 M349 M381 M391 M416 M431 M620 M782
    M903 M904 M910 P220 P814 P816 P930 Q211 Q220
    Specfic Compounds
    00419M
    Registry Numbers
    1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *17*
    Fragmentation Code
    H4   H401 H481 H8   J0   J011 J1   J171 M280 M312
    M321 M331 M340 M342 M349 M381 M391 M416 M431 M620
    M782 M903 M904 M910 P220 P814 P816 P930 Q211 Q220
    Specfic Compounds
    00009M
    Registry Numbers
    1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *18*
    Fragmentation Code
    B615 B701 B713 B720 B815 B831 D011 D019 D931 F012
    F013 F014 F015 F113 H1   H121 H2   H201 H4   H402
    H422 H8   J5   J521 K0   L8   L812 L821 L834 L9
    L941 M280 M311 M321 M342 M373 M391 M411 M431 M511
    M521 M530 M540 M782 M903 M904 M910 P220 P814 P816
    P930 Q211 Q220 V0   V762
    Specfic Compounds
    01099M
    Registry Numbers
    1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M2 *19*
    Fragmentation Code
    A111 A960 C710 H1   H100 H181 J0   J012 J1   J172
    M280 M313 M321 M332 M343 M349 M381 M391 M411 M431
    M510 M520 M530 M540 M620 M630 M782 M903 M904 M910
    P220 P814 P816 P930 Q211 Q220
    Specfic Compounds
    01142M
    Registry Numbers
    1704X 1724X 1711X 1714X 89290 1327U 0502U

Chemical Indexing M6 *07*
    Fragmentation Code
    M903 P220 P814 P816 P930 Q211 Q220 R280
    Registry Numbers
    1704X 1724X 1711X 1714X 89290 1327U 0502U
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UNLINKED-DERWENT-REGISTRY-NUMBERS: 0009U; 0035U ; 0116U ; 0247U ; 0419U ; 0540U ; 0900U ; 0902U ; 0903U ; 1099U ; 1142U ; 1320U ; 1656U

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SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1989-153066
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WEST

Generate Collection | Print

L10: Entry 41 of 42 File: DWPI Jul 11, 2000

DERWENT-ACC-NO: 1996-116794
DERWENT-WEEK: 200037

TITLE: Compsn. to treat diseases caused by putrefactive and pathogenic bacteria - comprises dietary fibre digestible by gastrointestinal tract bacteria, and polyphenol to alleviate diarrhoea

INVENTOR: RICHARDS, G N

PATENT-ASSIGNEE:

ASSIGNEE	CODE
UNIV MONTANA	UYMON

PRIORITY-DATA: 1994US-0278414 (July 21, 1994), 1995US-0434492 (May 4, 1995), 1999US-0356759 (July 19, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6087092 A	July 11, 2000		000	C12Q001/00
WO 9603150 A1	February 8, 1996	E	021	A61K045/06
US 5614501 A	March 25, 1997		004	A61K031/70
EP 797451 A1	October 1, 1997	E	000	A61K045/06

DESIGNATED-STATES: AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

CITED-DOCUMENTS:03Jnl.Ref; DE 3622896 ; EP 138784 ; EP 214317 ; EP 425272 ; JP 06219953 ; WO 8501441

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6087092A	July 21, 1994	1994US-0278414	Cont of
US 6087092A	July 19, 1999	1999US-0356759	
WO 9603150A1	July 21, 1995	1995WO-US09230	
US 5614501A	July 21, 1994	1994US-0278414	Div ex
US 5614501A	May 4, 1995	1995US-0434492	
EP 797451A1	July 21, 1995	1995EP-0927341	
EP 797451A1	July 21, 1995	1995WO-US09230	
EP 797451A1		WO 9603150	Based on

INT-CL (IPC): A61 K 31/70; A61 K 31/715; A61 K 31/72; A61 K 45/06; C07 G 17/00; C12 N 1/20; C12 Q 1/00; A61 K 31/72; A61 K 31:05; A61 K 31/72; A61 K 31:05

ABSTRACTED-PUB-NO: US 5614501A
BASIC-ABSTRACT:

Compsn. comprises a dietary fibre which is digestible by bacteria in the gastrointestinal tract and a polyphenol effective to alleviate diarrhoea. Also claimed

is a method for increasing growth rate, improving feed efficiency and decreasing scour after wearing in an animal comprising admin. of a dietary fibre which is digestible by bacteria in the gastrointestinal tract and a polyphenol .

USE - The compsns. are useful for treating diseases caused by putrefactive or pathogenic bacteria. The compsns. are used in animal feeds, or are used in powder form and added to food or drink for human consumption.
ABSTRACTED-PUB-NO:

US 6087092A
EQUIVALENT-ABSTRACTS:

A method for increasing growth rate, improving feed efficiency and decreasing scour after weaning in an animal, the method comprising administering to the animal an effective amount of a composition comprising an extract of wood of a tree of the genus Larix comprising arabino-galactan and a polyphenol, wherein thee arabino-galactan is water soluble, resists digestion by animal alimentary enzymes, and is selectively digested by Bifidobacteria.

Compsn. comprises a dietary fibre which is digestible by bacteria in the gastrointestinal tract and a polyphenol effective to alleviate diarrhoea. Also claimed is a method for increasing growth rate, improving feed efficiency and decreasing scour after wearing in an animal comprising admin. of a dietary fibre which is digestible by bacteria in the gastrointestinal tract and a polyphenol .

USE - The compsns. are useful for treating diseases caused by putrefactive or pathogenic bacteria. The compsns. are used in animal feeds, or are used in powder form and added to food or drink for human consumption.

WO 9603150A

CHOSEN-DRAWING: Dwg.0/0 Dwg.0/2

TITLE-TERMS: COMPOSITION TREAT DISEASE CAUSE PUTREFACTION PATHOGEN BACTERIA COMPRISE DIET FIBRE DIGEST GASTRO TRACT BACTERIA POLYPHENOL ALLEVIATE DIARRHOEA

DERWENT-CLASS: B04 B05 C03 D13

CPI-CODES: B04-C02A; C04-C02A; B04-C02X; C04-C02X; B10-E02; C10-E02; B12-M11G; C12-M11G; B14-A01; C14-A01; B14-E11; C14-E11; D03-G01; D03-H01T1;

CHEMICAL-CODES:

Chemical Indexing M1 *01*
Fragmentation Code
L8 L814 L818 L831 M423 M431 M782 M903 M904 M910
P220 P714 P735 Q220 V400 V406 V735
Specfic Compounds
01873M
Registry Numbers
1873U

Chemical Indexing M1 *02*
Fragmentation Code
M423 M431 M782 M903 M904 M910 P220 P714 P735 Q220
V400 V406 V711
Specfic Compounds
01852M
Registry Numbers
1852U

Chemical Indexing M1 *03*
Fragmentation Code
M423 M431 M782 M903 M904 M910 P220 P714 P735 Q220

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    V400 V406 V741
    Specfic Compounds
    01868M
    Registry Numbers
    1868U

Chemical Indexing M1 *04*
    Fragmentation Code
    K0   L8   L815 L816 M423 M431 M782 M903 M904 P220
    P714 P735 Q220 V400 V406 V735
    Specfic Compounds
    24069M

Chemical Indexing M2 *05*
    Fragmentation Code
    D013 D023 D120 G015 G100 H4   H405 H421 H444 H8
    M1   M113 M280 M320 M412 M431 M511 M520 M531 M540
    M782 M800 M903 M904 P220 P714 P735 Q220
    Specfic Compounds
    04686M

Chemical Indexing M2 *06*
    Fragmentation Code
    F012 F013 F014 F015 F016 F123 G017 G019 G100 H4
    H405 H444 H8   J0   J014 J2   J222 J232 K0   L8
    L814 L821 L831 M1   M121 M123 M129 M136 M139 M280
    M311 M321 M342 M373 M391 M413 M431 M510 M521 M533
    M540 M782 M903 M904 P220 P714 P735 Q220
    Specfic Compounds
    06321M

Chemical Indexing M1 *07*
    Fragmentation Code
    L811 L815 L816 M423 M431 M782 M903 P220 P714 P735
    Q220 V714
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UNLINKED-DERWENT-REGISTRY-NUMBERS: 1852U; 1868U ; 1873U

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SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C1996-036970
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WEST

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L10: Entry 39 of 42 File: DWPI Mar 13, 2001

DERWENT-ACC-NO: 2001-347754
DERWENT-WEEK: 200137

TITLE: Manufacture of health food for pet animals, involves blending glucosamine, chondroitin and superoxide dismutase like component containing catechin

PATENT-ASSIGNEE:

ASSIGNEE	CODE
KENTECH KK	KENTN

PRIORITY-DATA: 1999JP-0284645 (August 31, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2001064186 A	March 13, 2001		003	A61K031/726

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP2001064186A	August 31, 1999	1999JP-0284645	

INT-CL (IPC): A61 K 31/353; A61 K 31/726; A61 K 31/737; A61 P 43/00

ABSTRACTED-PUB-NO: JP2001064186A
BASIC-ABSTRACT:

NOVELTY - Health food for pet animals is manufactured by blending glucosamine, chondroitin and superoxide dismutase like component containing catechin.

USE - For manufacturing health food containing glucose and chondroitin which relieves articular pain by formation of cartilage which supports joints of dogs and cats, and catechin which inhibits harmful enzyme which destroys glucosamine.

ADVANTAGE - A low allergic foodstuff is obtained, as catechin is blended in the composition (claimed). The formation of articular cartilage in dog and cat is accelerated and the harmful enzyme which destroys the macro molecule of cartilage is inhibited effectively. Chondroitin in the health food removes cholesterol in the peripheral joints, relieves pain in the joints and reduces periosteum inflammation. The health food does not cause any side effects and hence can be administered comfortably to pet animals for long period of time. 8 month old male dog of 40 kg body weight with hypoplasia was administered with health food. The body weight was reduced to 36 kg and gait state was also turned better after 6 month of treatment.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: MANUFACTURE HEALTH FOOD PET ANIMAL BLEND GLUCOSAMINE CHONDROITIN DISMUTASE COMPONENT CONTAIN CATECHIN

DERWENT-CLASS: B04

CPI-CODES: B04-C02E2; B04-L03D; B06-A01; B10-A07; B14-C01; B14-C03; B14-J05; B14-N01;

B14-S12;

CHEMICAL-CODES:

Chemical Indexing M1 *01*
Fragmentation Code
F012 F013 F014 F015 F016 F019 F123 F199 H4 H405
H424 H5 H523 H8 J0 J014 J1 J113 J3 J322
K0 K4 K421 K499 L8 L814 L815 L819 L824 L834
M1 M126 M141 M210 M211 M262 M283 M311 M323 M342
M373 M393 M423 M431 M510 M523 M530 M540 M782 M904
M905 P411 P420 P517 P814
Specfic Compounds
01875K 01875T 01875M 06436K 06436T 06436M A0696K A0696T A0696M
Registry Numbers
1875U

Chemical Indexing M1 *02*
Fragmentation Code
M431 M782 M905 P411 P420 P517 P814
Specfic Compounds
A02HPK A02HPT A02HPM

Chemical Indexing M2 *03*
Fragmentation Code
H1 H100 H181 H4 H404 H484 H8 J4 J471 K0
L8 L814 L821 L834 M280 M315 M321 M332 M344 M349
M381 M391 M416 M431 M620 M782 M904 M905 M910 P411
P420 P517 P814
Specfic Compounds
01615K 01615T 01615M
Registry Numbers
1615U

Chemical Indexing M2 *04*
Fragmentation Code
D013 D023 D120 G015 G100 H4 H405 H421 H444 H8
M1 M113 M280 M320 M412 M431 M511 M520 M531 M540
M782 M904 M905 P411 P420 P517 P814
Specfic Compounds
04686K 04686T 04686M

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1615U; 1875U

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C2001-107733

WEST

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L10: Entry 38 of 42 File: DWPI Apr 10, 2001

DERWENT-ACC-NO: 2001-257749
DERWENT-WEEK: 200137

TITLE: An oral composition for improving breath comprises tea polyphenol

INVENTOR: JI, N; ZHU, L

PATENT-ASSIGNEE:

ASSIGNEE	CODE
PROCTER & GAMBLE CO	PROC

PRIORITY-DATA: 1999WO-US20607 (September 8, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
AU 9960302 A	April 10, 2001		000	A61K007/16
WO 200117494 A1	March 15, 2001	E	035	A61K007/16

DESIGNATED-STATES: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
AU 9960302A	September 8, 1999	1999AU-0060302	
AU 9960302A	September 8, 1999	1999WO-US20607	
AU 9960302A WO 200117494A1	September 8, 1999	WO 200117494 1999WO-US20607	Based on

INT-CL (IPC): A61 K 7/16; A61 K 7/26

ABSTRACTED-PUB-NO: WO 200117494A
BASIC-ABSTRACT:

NOVELTY - An oral composition (I) comprises: tea polyphenol, buffering agent, aqueous carrier (40-90 %), and with a total water content of 5-20 %.

ACTIVITY - Antibacterial.

The minimum inhibitory levels of tea polyphenol for the oral bacteria Streptococcus mutans 6715 DP is at 500 ppm. The benefits of the invention were illustrated, where breath protection efficacy of a composition containing 2 % tea phenol with triclosan at pH 8 (A) compared to commercially available CREST MANY-IN-ONE (B), from 0-4 hrs was measured using the halimeter reading. The halimeter detected the presence of volatile sulfur compounds in the breath where the higher the reading the less breath protection was provided. (A) showed halimeter readings at 0, 1, 2, 3 and 4 hrs to be 214, 74, 103, 139, and 155 respectively, whereas the reading for (B) was 224, 123, 140, 193, and 271, respectively. The composition comprising tea polyphenol provided better

breath protection efficacy over an extended period of time compared to the formulation not containing tea polyphenol.

MECHANISM OF ACTION - Inhibitor of glycoyltransferase; inhibitor of ptyalase.

Tea polyphenol can inhibit the reactivity of glycoyltransferase which can catalyze sucrose to form water insoluble glucan, where at this point the oral plaque formation can be stopped and it reduces the level of dextran that causes germs to adhere on the tooth surface. Tea polyphenol can react with sulfhydryl compound and amino compounds in neutral conditions, to remove oral malodor directly. Tea polyphenol also reduces ptyalase activity to interrupt carbohydrate degradation from starch to glucose in the mouth.

USE - (I) Freshens the breath by reducing the volatile sulfur compounds present in the oral cavity for at least one hour after (I) has been applied, as measured by the Halimeter test (claimed). Oral health benefits of tea polyphenol includes its potential use for anti-caries, anti-gingivitis, anti-stomatitis effects, against periodontosis and/or dental calculus.

ADVANTAGE - The components of tea polyphenol (catechins) provide physiological efficacious effects and other components improve the efficacy of catechines and provide efficacious effects such as anti-bacteria effects, free radical scavenging/cholesterol cleansing effect, and acceleration of saliva circulation. Tea polyphenol is safe for human. Tea polyphenol can deliver breath protection benefit due to its ability to inhibit bacteria i.e., S.mutans and S.sobrinud, when present at low and high concentrations. Also tea polyphenol is more stable in acidic environments and compositions having lower pH value buffer systems may provide better breath protection efficacy. Lower tea polyphenol purity provides better efficacy due to the vitamin series chemicals, tannic acid, chlorogenic acid and alkaloid (caffeine), which can improve activity of oral enzyme, such as saliva amylase. The antibiotic effect of tea polyphenol protects against caries, gingivitis, as well as breath protection.

CHOSEN-DRAWING: Dwg.0/3

TITLE-TERMS: ORAL COMPOSITION IMPROVE BREATH COMPRISE TEA POLYPHENOL

DERWENT-CLASS: B05 D21

CPI-CODES: B04-A10; B04-A10B; B06-A01; B10-E02; B12-M09; B14-D06; B14-N06; B14-N06A; D08-A05;

CHEMICAL-CODES:

Chemical Indexing M1 *01*
Fragmentation Code
M423 M431 M782 M905 P616 P912 P923 Q261
Specfic Compounds
A00GTK A00GTT A00GTM

Chemical Indexing M2 *02*
Fragmentation Code
F012 F013 F014 F015 F016 F123 G017 G019 G100 H4
H405 H444 H8 J0 J014 J2 J222 J232 K0 L8
L814 L821 L831 M1 M121 M123 M129 M136 M139 M280
M311 M321 M342 M373 M391 M413 M431 M510 M521 M533
M540 M782 M904 M905 P616 P912 P923 Q261
Specfic Compounds
06321K 06321T 06321M 11956K 11956T 11956M

Chemical Indexing M2 *03*
Fragmentation Code
A940 C009 C100 C720 C730 C801 C803 C804 C805 C806
C807 M411 M417 M431 M782 M904 M905 Q261
Specfic Compounds
06117K 06117M

Chemical Indexing M2 *04*
Fragmentation Code
B115 B702 B713 B720 B815 B832 C101 C108 C800 C802
C804 C805 C807 M411 M431 M782 M904 M905 M910 Q261
Q503
Specfic Compounds
01598K 01598M 10704K 10704M
Registry Numbers
1598U

Chemical Indexing M2 *05*
Fragmentation Code
H4 H401 H481 H8 J0 J013 J1 J173 M280 M313
M321 M332 M344 M349 M381 M391 M416 M431 M620 M782
M904 M905 M910 Q261 Q503
Specfic Compounds
00419K 00419M 07029K 07029M
Registry Numbers
0419U

Chemical Indexing M2 *06*
Fragmentation Code
A111 A960 C710 H4 H401 H481 H8 J0 J013 J1
J173 M280 M313 M321 M332 M344 M349 M381 M391 M411
M431 M510 M520 M530 M540 M620 M630 M782 M904 M905
Q261 Q503
Specfic Compounds
04004K 04004M A00DBK A00DBM
Registry Numbers
0419U

Chemical Indexing M2 *07*
Fragmentation Code
A422 A940 C108 C550 C730 C801 C802 C803 C804 C805
C807 M411 M431 M782 M904 M905 M910 Q261
Specfic Compounds
01966K 01966M
Registry Numbers
1966U

Chemical Indexing M2 *08*
Fragmentation Code
H4 H405 H484 H8 M280 M315 M321 M332 M344 M383
M391 M416 M431 M620 M782 M904 M905 Q261
Specfic Compounds
A0338K A0338M

Chemical Indexing M2 *09*
Fragmentation Code
G015 G019 G100 H4 H401 H441 H5 H541 H6 H602
H609 H643 H8 M1 M121 M141 M280 M320 M414 M431
M510 M520 M532 M540 M782 M904 M905 M910 P200 Q261
Specfic Compounds
01614K 01614T 01614M
Registry Numbers
1614U

Chemical Indexing M2 *10*
Fragmentation Code
B114 B702 B720 B831 C108 C800 C802 C803 C804 C805
C807 M411 M431 M782 M904 M905 Q261
Specfic Compounds
01694K 01694M
Registry Numbers

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     1694U

 Chemical Indexing M2 *11*
     Fragmentation Code
     A313 A940 C108 C550 C730 C801 C802 C803 C804 C805
     C807 M411 M431 M782 M904 M905 M910 Q261
     Specfic Compounds
     01544K 01544M
     Registry Numbers
     1544U

 Chemical Indexing M2 *12*
     Fragmentation Code
     B115 B215 B701 B713 B720 B815 B831 C101 C108 C720
     C730 C800 C802 C803 C804 C805 C807 M411 M417 M431
     M782 M904 M905 Q261
     Specfic Compounds
     06108K 06108M

 Chemical Indexing M2 *13*
     Fragmentation Code
     C316 D013 D016 E610 J5   J521 K0   K4   K441 L9
     L941 L970 M280 M320 M412 M431 M511 M520 M530 M540
     M782 M904 M905 M910 Q261
     Ring Index
     01150 01150
     Specfic Compounds
     00483K 00483M 10125K 10125M
     Registry Numbers
     0483U

 Chemical Indexing M2 *14*
     Fragmentation Code
     H4   H403 H483 H8   M280 M313 M321 M332 M343 M383
     M391 M416 M431 M620 M782 M904 M905 M910 Q261
     Specfic Compounds
     00113K 00113M
     Registry Numbers
     0113U

 Chemical Indexing M2 *15*
     Fragmentation Code
     H4   H402 H482 H8   M280 M312 M321 M332 M342 M383
     M391 M423 M431 M620 M782 M904 M905 M910 Q261
     Specfic Compounds
     00822K 00822M
     Registry Numbers
     0822U

 Chemical Indexing M2 *16*
     Fragmentation Code
     H4   H402 H482 H8   M280 M313 M321 M331 M342 M383
     M391 M416 M431 M620 M782 M904 M905 M910 Q261
     Specfic Compounds
     00137K 00137M
     Registry Numbers
     0137U

 Chemical Indexing M2 *17*
     Fragmentation Code
     A111 A940 C106 C108 C530 C730 C801 C802 C803 C805
     C807 M411 M431 M782 M904 M905 M910 Q261
     Specfic Compounds
     01287K 01287M
     Registry Numbers
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    1287U

Chemical Indexing M2 *18*
    Fragmentation Code
    A220 A940 C408 C550 C730 C801 C802 C803 C804 C805
    C807 M411 M431 M782 M904 M905 Q261
    Specfic Compounds
    04118K 04118M

Chemical Indexing M6 *19*
    Fragmentation Code
    M905 P200 P616 P912 P923 Q222 Q261 Q503 R111 R150
    R280 R305 R309 R310 R311 R317 R319
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UNLINKED-DERWENT-REGISTRY-NUMBERS: 0113U; 0137U ; 0419U ; 0483U ; 0822U ; 1287U ; 1544U ; 1598U ; 1614U ; 1694U ; 1966U

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SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C2001-077623
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L10: Entry 37 of 42 File: DWPI Jul 15, 2002

DERWENT-ACC-NO: 2001-401295
DERWENT-WEEK: 200253

TITLE: Health food for preventing diabetes mellitus and obesity, comprises carbohydrate digestive enzyme inhibitor and sugar absorption inhibitor

PATENT-ASSIGNEE:

ASSIGNEE	CODE
FANKERU KK	FANKN

PRIORITY-DATA: 1999JP-0287620 (October 8, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 3302346 B2	July 15, 2002		003	A23L001/30
JP 2001103928 A	April 17, 2001		004	A23L001/29

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
JP 3302346B2	October 8, 1999	1999JP-0287620	
JP 3302346B2		JP2001103928	Previous Publ.
JP2001103928A	October 8, 1999	1999JP-0287620	

INT-CL (IPC): A23 L 1/29; A23 L 1/30; A23 L 1/305; A23 L 1/307; A61 K 31/047; A61 K 31/235; A61 K 31/381; A61 K 31/445; A61 K 31/58; A61 K 31/7028; A61 K 35/78; A61 K 38/55; A61 K 45/06; A61 P 3/04; A61 P 3/10; C07 H 15/256; C07 J 17/00

RELATED-ACC-NO: 2002-420363

ABSTRACTED-PUB-NO: JP2001103928A
BASIC-ABSTRACT:

NOVELTY - A health foods composition comprises carbohydrate digestive enzyme inhibitors and sugar absorption inhibitors.

ACTIVITY - Antidiabetic; anorectic.

An adult healthy male who fasted overnight was administered with the above mixture. The blood glucose level was measured in time dependent manner. The result showed that increase in blood glucose level after a meal is inhibited effectively by carbohydrate digestive enzyme inhibitor and sugar absorption inhibitor present in Gymnema sylvestre and mulberry leaves, respectively.

MECHANISM OF ACTION - alpha -amylase inhibitor; alpha -glucosidase inhibitor; sugar absorption inhibitor.

USE - The invention is used as health food for treating and preventing diabetes mellitus, obesity and blood glucose elevation after a meal (claimed).

ADVANTAGE - The health food inhibits elevation of blood glucose after a meal, thereby prevents obesity.

CHOSEN-DRAWING: Dwg.0/0

TITLE-TERMS: HEALTH FOOD PREVENT DIABETES MELLITUS OBESITY COMPRISE CARBOHYDRATE DIGEST ENZYME INHIBIT SUGAR ABSORB INHIBIT

DERWENT-CLASS: B01 B05 D13

CPI-CODES: B07-D05; B10-A07; B10-E04A; B14-E12; B14-S04; D03-H01T2;

CHEMICAL-CODES:

Chemical Indexing M2 *01*
Fragmentation Code
F012 F013 F014 F015 F433 H4 H404 H423 H481 H8
K0 L8 L817 L821 L834 M280 M311 M321 M342 M373
M391 M413 M431 M510 M521 M530 M540 M782 M800 M904
M905 P731 P816
Specfic Compounds
06053K 06053T 06053M

Chemical Indexing M2 *02*
Fragmentation Code
G037 G562 H4 H404 H464 H8 M280 M320 M415 M431
M510 M520 M530 M541 M782 M904 M905 P731 P816
Specfic Compounds
A4CDOK A4CDOT A4CDOM

Chemical Indexing M2 *03*
Fragmentation Code
F012 F013 F014 F015 F016 F123 G017 G019 G100 H4
H405 H444 H8 J0 J014 J2 J222 J232 K0 L8
L814 L821 L831 M1 M121 M123 M129 M136 M139 M280
M311 M321 M342 M373 M391 M413 M431 M510 M521 M533
M540 M782 M904 M905 P731 P816
Specfic Compounds
06321K 06321T 06321M 11956K 11956T 11956M

SECONDARY-ACC-NO:
CPI Secondary Accession Numbers: C2001-122320

WEST

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L10: Entry 36 of 42 File: EPAB Feb 8, 1996

PUB-NO: WO009603150A1
DOCUMENT-IDENTIFIER: WO 9603150 A1
TITLE: COMPOSITIONS CONTAINING HEMICELLULOSES AND POLYPHENOLS FOR TREATING GASTROINTESTINAL DISORDERS

PUBN-DATE: February 8, 1996

INVENTOR-INFORMATION:
NAME COUNTRY
RICHARDS, GEOFFREY N

ASSIGNEE-INFORMATION:
NAME COUNTRY
UNIV MONTANA US

APPL-NO: US09509230
APPL-DATE: July 21, 1995

PRIORITY-DATA: US27841494A (July 21, 1994)

INT-CL (IPC): A61 K 45/06; A61 K 31/72
EUR-CL (EPC): A61K031/72; A61K045/06

ABSTRACT:

Compositions containing hemicelluloses in combination with polyphenols, methods of preparing the compositions, and methods of treating humans or animals with the composition are provided. Also provided is a method for increasing growth rate, improving feed efficiency and decreasing scour after weaning in an animal by administering an effective amount of the composition to the animal. The hemicelluloses preferably are not consumed by human alimentary enzymes or harmful bacteria, such as putrefactive or pathogenic bacteria, in the gastrointestinal tract, and are consumed by beneficial bacteria, such as bifidobacteria, in the gastrointestinal tract. The polyphenols preferably decrease the amount of harmful bacteria in the gastrointestinal tract. The compositions can optionally contain a carrier or be used as a feed addition and are administered to humans or other animals in an amount sufficient to treat the gastrointestinal disorder.

WEST

End of Result Set

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L3: Entry 2 of 2 File: DWPI Jul 28, 1979

DERWENT-ACC-NO: 1979-65614B
DERWENT-WEEK: 197936

TITLE: Isomerisation of glucose to fructose - using water-insol. gel of suitable microbial bodies and other additives

PATENT-ASSIGNEE:

ASSIGNEE	CODE
SHOWA SANGYO CO	SHOS

PRIORITY-DATA: 1976JP-0001789 (January 8, 1976), 1976JP-0004462 (January 16, 1976)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 54095744 A	July 28, 1979		000	

INT-CL (IPC): C12D 13/00; C13K 3/00

ABSTRACTED-PUB-NO: JP54095744A
BASIC-ABSTRACT:

Method comprises using a water insoluble gel of microbial body which is prepd. by using the microbial body showing glucose-isomerase activity and >=1 of agar, gelatin, colagen, pectin, konjak powder, locust bean gum, casein, wheat gluten, soy bean protein, egg white, tannin, persimmon tannin, four and starch.

Glucose-isomerase is an endoenzyme and the microbial body itself can be inexpensively made to the insolubilised enzyme showing high enzymic activity. The insolubilised enzyme is inexpensive and the isomerising process can be stably practiced without the complex steps for regulating S.V., temp., etc. which has been required by the isomerising process using conventional expensive insolubilised enzyme in fixed bed.

TITLE-TERMS: ISOMER GLUCOSE FRUCTOSE WATER INSOLUBLE GEL SUIT MICROBE BODY ADDITIVE

DERWENT-CLASS: D16 D17 E13

CPI-CODES: D05-A02; D05-C08; D06-G; E10-A07;

CHEMICAL-CODES:

Chemical Indexing M3 *01*
Fragmentation Code
K0 H4 J5 M311 M313 M314 M332 M321 M280 M342
M340 M344 M380 M392 L810 H482 H483 H484 J581 M620
N130 N171 N172 N340 H404 H405 Q241 M510 H8 M520
M530 M540 M720 M416 M902

L13: Entry 3 of 17 File: USPT Nov 2, 1999

DOCUMENT-IDENTIFIER: US 5976527 A
TITLE: High surface area support having bound latex particles containing oxirane groups for immobilization of substances

Brief Summary Text (108):
The reactive high-surface-area systems in accordance with the invention are suited for the immobilization of all classes of enzymes, for example, oxidoreductases, transferases, hydrolases, lyases, isomerases and ligases. Thus, the high-surface-area systems of the invention are suited for the immobilization of enzymes suited for therapeutic use and adaptable to oral administration, for example proteases and/or lipases and/or amylases.

L11: Entry 5 of 17 File: USPT Nov 2, 1999

DOCUMENT-IDENTIFIER: US 5976527 A
TITLE: High surface area support having bound latex particles containing oxirane groups for immobilization of substances

Brief Summary Text (108):
The reactive high-surface-area systems in accordance with the invention are suited for the immobilization of all classes of enzymes, for example, oxidoreductases, transferases, hydrolases, lyases, isomerases and ligases. Thus, the high-surface-area systems of the invention are suited for the immobilization of enzymes suited for therapeutic use and adaptable to oral administration, for example proteases and/or lipases and/or amylases.

L13: Entry 6 of 17 File: USPT Oct 22, 1985

DOCUMENT-IDENTIFIER: US 4548922 A
TITLE: Drug administration

Brief Summary Text (46):
Other suitable drugs include the physiologically active enzymes transfereses, hydrolases, isomerases, proteases, ligases, and oxidoreductases such as esterases, phosophatases, glycosidases and peptidases; enzyme inhibitors such as leupeptin, chymostatin and pepstatin; and growth factors such as tumor angiogenesis factor. Other suitable drugs are those normally absorbed to a limited extent across the gastrointestinal mucosa after oral administration; e.g. antihistamines, and drugs affecting the cardiovascular, renal, metabolic, hepatic and immune systems.

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L11: Entry 11 of 17 File: USPT Oct 22, 1985

DOCUMENT-IDENTIFIER: US 4548922 A
TITLE: Drug administration

Brief Summary Text (46):
Other suitable drugs include the physiologically active enzymes transfereses, hydrolases, isomerases, proteases, ligases, and oxidoreductases such as esterases, phosophatases, glycosidases and peptidases; enzyme inhibitors such as leupeptin, chymostatin and pepstatin; and growth factors such as tumor angiogenesis factor. Other suitable drugs are those normally absorbed to a limited extent across the gastrointestinal mucosa after oral administration; e.g. antihistamines, and drugs affecting the cardiovascular, renal, metabolic, hepatic and immune systems.

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L11: Entry 10 of 17 File: USPT May 24, 1988

DOCUMENT-IDENTIFIER: US 4746508 A
TITLE: Drug administration

Brief Summary Text (53):
Other suitable drugs include the physiologically active enzymes: transferases, hydrolases, isomerases, proteases, ligases, and oxidoreductases such as esterases, phosphatases, glycosidases and peptidases; enzyme inhibitors such as leupeptin, chymostatin and pepstatin; and growth factors such as tumor angiogenesis factor, epidermal growth factor, nerve growth factor and insulin-like growth factors. Other suitable drugs are those normally absorbed to a limited extent across the gastrointestinal mucosa after oral administration; e.g. antihistamines (e.g. diphenylhydramine and chlorpheniramine), and drugs affecting the cardiovascular (e.g., antihypertensives), renal, hepatic and immune systems (including vaccines). Additionally, sympathomimetic drugs, such as the catecholamines (e.g. epinephrine) and non-catecholamines (e.g. phenylephrine and pseudoephedrine) may be administered according to the method of the present invention.

Still need to get these. patent

L11: Entry 9 of 17 File: USPT Sep 25, 1990

DOCUMENT-IDENTIFIER: US 4959358 A
TITLE: Drug administration

Brief Summary Text (53):
Other suitable drugs include the physiologically active enzymes: transferases, hydrolases, isomerases, proteases, ligases, and oxidoreductases such as esterases, phosphatases, glycosidases and peptidases; enzyme inhibitors such as leupeptin, chymostatin and pepstatin; and growth factors such as tumor angiogenesis factor, epidermal growth factor, nerve growth factor and insulin-like growth factors. Other suitable drugs are those normally absorbed to a limited extent across the gastrointestinal mucosa after oral administration; e.g. antihistamines (e.g. diphenhydramine and chlorpheniramine), and drugs affecting the cardiovascular (e.g., antihypertensives), renal, hepatic and immune systems (including vaccines). Additionally, sympathomimetic drugs, such as the catecholamines (e.g. epinephrine) and non-catecholamines (e.g. phenylephrine and pseudoephedrine) may be administered according to the method of the present invention.

L9: Entry 3 of 8 File: USPT Aug 21, 1990

DOCUMENT-IDENTIFIER: US 4950596 A
TITLE: Stabilization of intracellular enzymes

Brief Summary Text (16):
Surrounding a particle with a membranous envelope is referred to as encapsulation. In the field of enzymology, microencapsulation of enzyme or enzyme producing organisms has been used as a means of immobilization and enzyme stabilization. Typically, the enzyme is encapsulated in semipermeable membranes. The semipermeable membrane serves as a barrier to prevent the enzyme from leaking out to the substrate solution, and to keep impurities from getting close to the enzyme and accelerating enzyme inactivation. (T. M. S. Chang, Science, 146, 524 (1964)). According to the present invention, the immobilized glucose isomerase (IMGI) is encapsulated by coating, such as by dipping, the immobilized glucose isomerase particles in or with a solution of, for example, a partially carboxymethylated PEI to form a thin membranous envelope which is insolubilized upon crosslinking with a crosslinking agent such as glutaraldehyde.

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L5: Entry 1 of 5 File: USPT Sep 4, 1990

DOCUMENT-IDENTIFIER: US 4954443 A
TITLE: Method of immobilizing biochemically active substance with xanthan gum

Brief Summary Text (6):
Many studies have been recently made in an attempt to increase production yield of such useful substances by using enzymes or microorganisms immobilized on carriers. Production of useful substances using immobilized enzymes include optical resolution a of DL-amino acid with aminoacylase, production of isomerized sugar with glucose isomerase, production of L-malic acid with fumarase, and production of low-lactose milk with .beta.-galactosidase. For production of useful substances using immobilized microorganisms, studies are being made on the production of ethanol with an alcohol yeast, production of acetic acid with a strain of genus Acetobacter, production of lactic acid with a strain of genus Lactobacillus, and production of n-butanol and isopropanol with a strain of genus Clostridium. Examples using immobilized animal/plant cells include production of digoxin with Digitalis lanata and production of anthraquinones with Morinda citrifolio.

Brief Summary Text (16):
Enzymes utilizable in aqueous and non-aqueous reaction systems can be used. Examples of enzymes which can be utilized in aqueous reaction systems include isomerases such as glucose isomerase; hydrolase such as invertase, urease, protease, or lipase; and lactose decomposing enzymes such as .alpha.-galactosidase or lactase (.beta.-galactosidase). Examples of enzymes which can be utilized in non-aqueous reaction system include lipase, used for manufacturing cacao-substitute oils and fats by interesterification of animal/plant oils and fats.

Brief Summary Text (23):
According to the method of the present invention, a Xanthan gum which has such low toxicity and excellent stability against enzymes, or a derivative of such a Xanthan gum, is used as an immobilizing agent. Examples of derivatives of Xanthan gum include a derivative obtained through deacetylation of O-acetyl groups in the Xanthan gum molecules (Japanese Patent Disclosure No. 59-142201), a derivative having a low pyruvate content (Japanese Patent Disclosure No. 58-21403), a derivative containing no pyruvic acid (Japanese Patent Disclosure No. 56-85293 and No. 56-85284), and a derivative having a low Ca content (Japanese Patent Disclosure No. 54-15800). Guar gum or locust bean gum can be added in order to increase viscosity and gel strength of the Xanthan gum.

Brief Summary Text (28):
When guar gum or locust bean gum is added, its amount is usually to be 10% to 80% and preferably 20% and 70%, based on the weight of the Xanthan gum or its derivative. Specifically, guar gum is usually used in an amount of 10 to 80%, preferably 25 to 75% of the total weight of the immobilizing agent plus guar gum, in which the immobilizing agent usually occupies 90 to 20%, preferably 75 to 25%. Locust bean gum is usually used in an amount of 10 to 80%, preferably 20 to 70% of the total weight of the immobilizing agent plus locust bean gum, in which the immobilizing agent usually occupies 90 to 20%, preferably 80 to 30%.

Detailed Description Text (32):
Rhizopus delemar (IFO 4730) was cultured in 50 ml of a potato sucrose solution at 25.degree. C. for 3 days. After adding 100 ml of an aqueous solution containing 3% of Xanthan gum (Kelco Co., U.S.A.) and 1% of guar gum or locust bean gum (food additive grade, available from K.K. Nichiei Chemical, Japan), the mixture was dripped into a 5%

ferric chloride aqueous solution while stirring, to allow a bead-like, water-insoluble substance to precipitate. The precipitate was filtered out and washed with water to provide an immobilized material, as in Example 7. Thirty grams of the immobilized material were added to 30 ml of a 0.5M phosphoric acid buffered solution (pH 6), and thereafter 10 g of olive oil (neutralization number 0.1) and 1 g of polyvinyl alcohol were added. After the mixture was shaken at 30.degree. C. for 24 hours, the acid value was measured to be 112. Thus, fat hydrolysis activity of the lipase immobilized in this manner was confirmed. Forty grams of the immobilized material were added to 10 g each of olive oil and palmitic acid dissolved in 40 ml of n-hexane, and allowed to interesterify at 30.degree. to 35.degree. C. while being stirred. When the triglyceride composition ratio of the reaction product was examined by gas chromatography, triolein (non-substituted product) : dioleylmonopalmitin (mono-substituted product) : monooleyldipalmitin (di-substituted product) : tripalmitin (tri-substituted product) was 60 : 28 : 12 : 0. Thus, interesterification activity of the lipase immobilized in this manner was confirmed.

L12: Entry 149 of 192 File: USPT Oct 22, 1974

DOCUMENT-IDENTIFIER: US 3843785 A
TITLE: METHOD OF TREATING PROSTATIC HYPERTROPHY WITH LEVARIN

Brief Summary Text (37):
Other procedures and materials well known in the prior art may be employed to prepare suitable enteric coatings. The selection of the coating substance is governed to a large extent by pH and enzyme considerations and the desire to have the enteric composition disintegrate or dissolve when it reaches the duodenum region of the intestinal tract and not in the stomach. The disintegration or dissolution of an enteric coating in the intestinal tract usually depends on several factors, the most important of which are (1) the presence of acidic groups in the enteric substance which cause it to be insoluble in the low pH environment of the stomach but soluble in the intestinal tract due to the higher (but usually not alkali) pH of the media there, and (2) the resistance of the coating to attack by oral and gastric enzymes.

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L5: Entry 2 of 5 File: USPT Jun 2, 1987

DOCUMENT-IDENTIFIER: US 4670387 A
TITLE: Fermentative production of isomaltulose

Detailed Description Paragraph Table (4):
TABLE 4

Product/ Half-life	Immobilization Technique	Immobilization technique Activity (g wet cells/h)	(hours).
Calcium alginate	0.325	8,500	
DEAE cellulose	0.583	400	
Polyacrylamide	0.13	570	
Glutaraldehyde	0.153	40	
aggregated cells K-carrageenan-locust bean gum	0.263	37.5	
Bone char	0.01	25	
Agar	0.34	27	
Xanthan-locust bean gum	0.10	8	

Other Reference Publication (1):
Kolarik, et al., Glucose Isomerase Cells Entrapped in Cellulose Acetates, Immobilized Enzymes in Food and Microbial Processes, 1973, Plenum Press, pp. 71-83.

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L5: Entry 3 of 5 File: USPT Apr 29, 1986

DOCUMENT-IDENTIFIER: US 4585738 A
TITLE: Immobilized enzyme systems

Brief Summary Text (5):
Food processors have had a long and continuing interest in developing the potential of enzyme systems to modify foods and beverages. In recent years, this interest has been intensified by the development of immobilization procedures that allow enzymes to be attached to solid surfaces while still retaining their functionality. Enzyme immobilization permits a high degree of process control, and reuse of the enzyme over an expanded time period. Because the enzyme no longer appears as an additive in the final product, an additional processing step to remove it in order to prevent overtreatment during storage due to continuing activity is not necessary. Major industrial-scale immobilized enzyme processes in which various amino acylases adsorbed to DEAE cellulose or DEAE agarose are employed to convert tonnage quantities of synthetic DL amino acids to the biologically available L-form. Similarly, glucose isomerase adsorbed to DEAE cellulose has been used in the full-scale conversion of corn syrup sugar to fructose.

Brief Summary Text (9):
For example, U.S. Pat. No. 4,113,567 describes a modified phenolic polymer substrate for enzyme immobilization, in which the phenolic polymer has pendant aldehyde or diazonium salt groups. U.S. Pat. No. 3,767,531 concerns immobilization of an active enzyme by glutaraldehyde on a substrate of phenol formaldehyde resin. U.S. Pat. Nos. 3,992,329 and 4,078,970 relate to adsorption of an enzyme such as glucose isomerase within the pores of an inorganic support, or a porous anion exchange resin. U.S. Pat. Nos. 3,852,496 and 4,016,293 concern a process for using insolubilized lactase to hydrolyze lactose from cheese whey, in which the enzyme is treated with glutaraldehyde, silane coupling agents or other materials. U.S. Pat. No. 4,338,398 describes the cross-linking of starch degrading enzymes with a wide variety of mono and polyfunctional materials such as aldehydes, isocyanates and methylol groups, and their absorption onto a water insoluble, porous substrate.

Brief Summary Text (21):
Various useful food processes include the manufacture of high fructose corn syrup by means of immobilized glucose isomerase which converts glucose to fructose until an equilibrium mixture is obtained, starch hydrolysis to glucose by means of immobilized glucoamylase, the hydrolysis of lactose to glucose and galactose by means of immobilized lactase. In this latter regard, the feed streams for such immobilized lactase component may comprise whey, whey permeate and milk permeate. In addition, immobilized lactase may be utilized to hydrolyze lactose in milk to reduce the effects of lactose intolerance. Other processes include modification of milkfat by immobilized esterases, and modification of proteinaceous foodstuffs by proteolytic enzymes such as rennins, pepsin and papain.

Brief Summary Text (24):
As indicated, in accordance with the present invention, tea polyphenols are utilized in the immobilization of enzymes. The tea polyphenol immobilization agent may desirably be selected from the group consisting of green or black tea, tea flavanols, tea bisflavanols, tea flavanol oxidation polymers and mixtures thereof. Tea polyphenols are derived from natural sources, being present in the aqueous extract of leaves of the plant Camellia sinensis (also known as Thea sinensis) which has long served as a natural human beverage. There are two principal kinds of aqueous tea infusions. Green tea is prepared without so-called "fermentation" while black tea is

prepared from "fermented" tea leaves. Partially fermented teas (e.g., oolong teas) are regarded herein to be "fermented" teas. Green tea shoots contain a substantial quantity of polyphenolic substances which are water soluble. Quantitatively, the most important water soluble components of green tea are polyphenols. The catechins (flavan-3-ols) are the major substances of this group, and may amount to about 25% of the dry weight of the leaf. A representative approximate composition of green tea shoots (assam variety) is shown in the following table:

Brief Summary Text (25):
Examples of specific tea polyphenols are as follows: ##STR1## Processing of the green tea leaf into black tea includes a so-called "fermentation" step which is primarily an enzymatic oxidation of tea polyphenols originally present in the green tea leaf. The term "fermentation" is accordingly a misnomer because it is an enzymatic oxidation apparently initiated by a polyphenol oxidase specific for the flavanols (catechins) and various other phenolic components of green tea leaf, but has acquired descriptive meaning with respect to tea processing and chemistry. During fermentation, the catechins are largely consumed to produce various more complex polyphenols including a series of ortho-quinones. For example, the following bisflavanols shown are believed to be included in the black tea oxidation product: ##STR2##

Brief Summary Text (33):
The utilization of tea polyphenols including tea flavanols, comprising epi-gallocatechin gallate, epi-catechin gallate, epi-gallocatechin, and epi-catechin and polymeric oxidation products thereof to stabilize an absorbed enzyme complex and provide enhanced and prolonged functionality over an untreated system is further described with respect to the preparation and utilization of a tea polyphenol lactase carboxymethyl cellulose adduct.

Brief Summary Paragraph Table (1):

APPROXIMATE COMPOSITION OF GREEN TEA SHOOTS

(ASSAM VARIETY) Dry Weight (%)	Substances
soluble in hot water Flavanols	(--) epi-gallocatechin gallate 9-13 (--) epi-catechin gallate 3-6 (--) epi-gallocatechin 3-6 (--) epi-catechin 1-3 other flavonals 1-2 Flavonols and flavonol glycosides 3-4 Leucoanthocyanins 2-3 Acids and depsides 5 Total polyphenols 30 Caffeine 3-4 Amino-acids 4 Simple carbohydrates 4 Organic Acids 0.5
Substances partially soluble in hot water	Polysaccharides - Starch 1-2 Pectic substances, pentosans, etc. 12 Proteins 15 Ash 5
Substances insoluble in water	Cellulose 7 Lignin 6 Lipids 3 Pigments 0.5 Volatile Substances 0.01- 0.02

CLAIMS:

1. A method for preparing an immobilized enzyme composition comprising the steps of providing an enzyme composition to be immobilized, providing a suitable insoluble immobilization support for the enzyme, and combining said enzyme and said support with an edible water soluble tea polyphenol immobilization agent selected from the group consisting of green tea extract of Camellia sinensis, black tea extract of Camellia sinensis, (-) epi-gallocatechin gallate, (-) epi-catechingallate, (-) epi-gallocatechin, (-) epi-catechin, theogallin, Camellia sinensis tea flavanols, Camellia sinensis bisflavanols, Camellia sinensis tea flavanol oxidation polymers and mixtures thereof to form an immobilized enzymatically active composition comprising an adduct of said enzyme, said support and said tea polyphenol immobilization agent.

L12: Entry 150 of 192 File: USPT Jan 29, 1974

DOCUMENT-IDENTIFIER: US 3789117 A
TITLE: PROCESS FOR THE PREPARATION OF ENTERIC MEDICAMENTS

Brief Summary Text (4):
As a process for producing enteric medicaments, there is known a process in which medicaments are coated with a dibasic acid monoester derivative such as cellulose acetate phthalate or cellulose acetate succinate. By using such a cellulose derivative, a beautiful enteric coating can be quite readily obtained by employing an ordinary pan coating method or a fluidization process. However, when such a cellulose derivative is used for preparing enteric coating for some kinds of enzymes such as pancreatins, bromelin, trypsin, chymotrypsin, and the like, it sometimes happens that the enteric property of the coated medicament is lost with the passage of time during preservation. Furthermore, it is known that such enteric medicament is insolublized in artificial enteric juice of the pharmacopoeia or becomes soluble in artificial gastric juice. These problems are also described in the article "Recent Pharmaceutical Techniques" in Nippon Yakugyo Shinbun (Japan Pharmaceutical News) of Sept. 27, 1969.

L5: Entry 4 of 5 File: USPT Sep 24, 1985

DOCUMENT-IDENTIFIER: US 4543332 A
TITLE: Method for the preparation of spherical microorganism cell aggregates

Detailed Description Text (2):
Typical of the micoorganisms which can be immobilized in the form of tough, spherical aggregates by the method of this invention are those useful in the production of glucose isomerase. Glucose isomerase is an enzyme that can be employed to catalyze the conversion of glucose (dextrose) to fructose (levulose). It is known that fermentation of certain organisms such as Streptomyces flavoirens, S. echinatur, S. achromogenus, S. albus, S. olivaceus, Actinoplanes missouriensis and Bacillus coagulans in an appropriate nutrient medium results in the production of glucose isomerase. While the detailed description in this specification is directed toward the immobilization of those cells which produce glucose isomerase, the process can be used with various enzyme containing bacterial cells.

Detailed Description Text (8):
The rehydration toughness assay procedure is carried out as follows: A 33 weight percent aqueous solution of glucose is adjusted to pH 8.1. A 160 gm. portion of dried bacterial cell aggregate is mixed with 1300 ml. of the glucose solution with gentle agitation at 24.degree. C. for 1 hour. The resulting mixture is drained over a 20 mesh U.S.A. standard testing sieve screen for about 30 seconds. The solids are then resuspended in a fresh portion of the glucose solution and stirred for 5 minutes at 24.degree. C. The resulting slurry is allowed to settle for 5 minutes and then drained as above. The solids are then resuspended in a fresh portion of the glucose solution and stirred for 5 minutes at 24.degree. C. Approximately half of the resulting slurry is then poured into the test cell to a height of 4 in. (10.17 cm.). A reduced pressure or vacuum of 1 in. (2.54 cm.) of mercury is applied to the bottom of the test cell for 3 minutes to suck liquid through the microfilter, and the plunger is then lowered until it just touches the top of the sample. The crosshead on the Instron instrument is attached to the plunger and is set to move downward at a speed of 0.5 in./minute (1.27 cm./minute) and to withdraw automatically at a penetration of 1 in. (2.54 cm.). The recording chart speed is set at 5 in./minute (12.7 cm./minute). The resistance from the enzyme bed against the plunger versus the plunger downward travel distance is recorded on the chart. The resistance force is then expressed as a quadratic function of the plunger travel distance. The toughness of the hydrated enzyme bed represents work done by the plunger against the bed. The higher the endurance of the enzyme bed against compression, the higher the work value and, consequently, the greater the toughness of the aggregate. The toughness of the aggregate is of particular importance in the fixed bed conversion of glucose to fructose because a general life span of a glucose isomerase enzyme bed reactor column is usually longer than 80 days. During this period, the enzyme particles must endure such forces as the weight of the upper enzyme bed layer and the downward dragging force of the syrup. As a result, the aged enzyme bed may collapse to plug up the reactor or may crack to create flow channeling. In either event, the result is detrimental to economical operation of the reactor. However, an enzyme bed with tough particles may remain intact or undergo only minor deformation through the aging period without negatively affecting the physical structure and biochemical performance of the reactor.

Detailed Description Text (9):
It has been discovered that the toughness of the spherical aggregates can be increased by the addition of a binder to the formulation after filtration but before extrusion of the filter cake. A material useful as binder in this formulation should provide intrabinding cohesiveness within a particle but not inter-binding adhesiveness or

stickiness such as to cause lumping during spheronization. The desired binder serves as a glue to stick the mass within the particle closely together after drying and, therefore, enhance the toughness of the particle. Examples of suitable binder materials are sodium alginate, Locust bean gum, Xanthan gum, carboxymethylcellulose, kappa carrageenan and Guar gum. In general, suitable binder materials fall into the category of natural gums including seaweed extracts such as alginate and carrageenan, seed gums such as Guar and Locust bean gum; cellulose derivatives such as carboxymethylcellulose, microcrystalline cellulose; and microbial gums such as Xanthan. These are GRAS and often used in food processing.

Detailed Description Text (16):
One of the 5 portions was cut into small pieces of about 1 square cm. in a Hobart silent chopper (Model 84145) which were then extruded through a die have 8 1/16 inch (1.59 mm.) diameter openings using a 3:1 compression extruder screw with 100 RPM screw rotation. The resulting extrudate was then dried at 60.degree. C. for 2 to 4 hours and milled through a Homoloid machine with a 1/8 inch opening screen (Model J from the W. J. Fitzpatrick Company) to obtain particles with a size smaller than 16 mesh. Oversize particles resulting from the first mill were recycled and milled until all ground particles were smaller than 16 mesh. The milled particles were then examined for size distribution followed by collecting the desirable size fraction which passed through a 16 mesh U.S. standard testing sieve screen but were retained by a 24 mesh screen. The fines which passed through the 24 mesh screen were collected for further use. The -16+24 mesh fraction so produced was designated as 1A. Its glucose isomerase activity was measured by the assay method set forth in U.S. Pat. No. 3,779,869 to be 500 glucose isomerase units (G.I.U. per gm. or equal to 1.mu.-mole fructose per minute per gram of enzyme). In addition, the particles' toughness was measured in the previously described Rehydration Toughness Assay Procedure.

Detailed Description Text (23):
An immobilized glucose isomerase filter cake of 72.9% moisture prepared exactly the same as the cake used in example I was divided into 9 parts and processed as follows: Sample 2A was prepared from 1000 gm. of cake cut into small pieces and mixed with 112 gm. of recycled fines obtained by using the same batch of filter cake and going through a drying step at 60.degree. C. for 2 hours with subsequent milling to a size smaller than 100 mesh and 70 ml. of water in a Hobart blender. The mixture was further extruded, dried, ground, screened and evaluated both biologically and mechanically by the procedure described in the preparation of sample 1A.

Detailed Description Text (25):
Sample 2C was prepared like sample 1C except that 56 gm. of cellulose, 7 gm. of sodium alginate, 56 gm. of recycled fines and 70 ml. of water were mixed with the ground cake in the blender and the mesh size of dry product evaluated was -16+24. Samples 2D, 2E, 2F, and 2H were prepared exactly the same as sample 2C except the binders used were Locust bean gum, Xanthan gum, carboxymethylcellulose and Guar gum, respectively. Sample 2G was prepared using 8 gm. of kappa carrageenan. Sample 2I was prepared using 7 gm. of Locust bean gum but was extruded through a die with 60 openings of 0.7 mm. diameter and screened to a mesh size of -16+48. The spheronization conditions for samples 2C-2I are set out in table IIb.

Detailed Description Text (32):
In this example, the effect of the use of single and mixed binders on the toughness of the product was studied. A filter cake of 71.2% immobilized enzyme was split into 6 parts. Formulation of each sample is shown in table IVa. Sample 4A, used as control, was prepared using the same procedure as for sample 2A, while the procedure for samples 4B, 4C, 4D, 4E and 4F was the same as that for 2C. The activity and toughness of these particles is set out in table IVa. The toughness of samples 4C and 4D was about 175% higher than that of the control, while that of 4B, 4E and 4F was about 80% higher than the control. The toughness results for samples 4C and 4D showed that there is no cumulative or synergistic effect obtained by using 2 binders as compared to the single system. Results of sample 4B, 4E and 4F indicate the interchangeability between Guar and Locust bean gums possibly due to their similarity in raw material origin and chemical structure. The biocatalytic activity of all the samples was very similar. The bulk density of the control was 63.8 g./100 ml. whereas the spheronized samples showed a density range of 75.8 to 81.2 g./100 ml. The spheronization conditions for these samples are set out in table IVb.

Detailed Description Text (34):
This example illustrates the advantage of spheronized particles over the milled counterpart regarding its total available activity expressed in Modified Immobilized Glucose Isomerase Column (MIGIC) assay; cumulative productivity expressed in grams of fructose per gram of enzyme and its half life. Experimental results are summarized in table V.

Detailed Description Text (35):
To prepare the particles, 1 batch of immobilized filter cake with a moisture content of 72.3% was processed the same as the procedure described for sample 1A except that the selected particle size was smaller than 28 but larger than 35 mesh (-28+35). This sample was designated as 5A. A portion of the cake was processed the same as sample 1D except the gum used was Locust bean gum, the amount of recycled fines was 30 gm. and their size range was -28+35. This sample was designated as 5B. Another batch of filter cake with a moisture level of 70.0% was also processed the same as 5A and designated 6A. A portion of this batch of cake was processed like 5B except the amount of fines used was 60 gm. This sample was designated as 6B. The MIGIC and cumulative productivity assay is carried out as follows:

Detailed Description Text (37):
This procedure is for assaying immobilized glucose isomerase derived from Steptomyces olivaceus var. This assay is intended to give the mean integral rate of glucose isomerase at a 42% fructose conversion. The assay is based on the enzymatic isomerization of a defined glucose substrate to fructose in a column reaction at 60.degree. C. and pH 7.8 (measured at 25.degree. C.) under defined conditions. The conversion rate of glucose to fructose is determined polarimetrically. One Modified Immobilized Glucose Isomerase Column (MIGIC) Unit is defined as that activity which will produce 1.mu. mole of fructose per minute under the conditions of the assay.

Detailed Description Text (39):
A dual enzyme dextrose syrup containing 71% solids with 95% DE was purchased from Royal Glucose Corn Products. The syrup is diluted to 31% solids, demineralized and supplemented with 50 ppm. magnesium ion, 250 ppm. sulfite and 125 ppm. propyl parahydroxybenzoate. This liquid is used for enzyme preparation and as a substrate for the enzyme system. 25 g. of dry immobilized glucose isomerase is dispensed to a 500 ml. beaker containing 200 ml. of previously prepared syrup. The mixture is allowed to stand for 2 hours. Every half-hour resuspend the glucose isomerase with a stirring rod and readjust to pH 7.8. After 2 hours, the rehydrated glucose isomerase is gently stirred with an overhead stirrer on a hot plate and slowly equilibrated to 60.degree. C.

Detailed Description Text (40):
Assemble and connect jacketed column (1.5.times.100 cm., from Glenco Scientific, Inc., Houston, TX) to the constant temperature circulating water bath (60.degree. C..+-.0.1.degree. C.). Place Pyrex glass wool at a depth of 2 cm. above the column outlet. Over the glass wool place approximately 1 cm. of 0.5 mm. glass beads. Into the top of the column add the equilibrated glucose isomerase utilizing a funnel. Allow the hydrated glucose isomerase to settle in the column by gravity. Any isomerase adhering to the inside of the funnel should be washed into the column with additional equilibrated glucose substrate.

Detailed Description Text (41):
With the glucose isomerase in the column, connect the substrate reservoir to the water jacketed column at 60.degree. C. Connect the outlet of the column at 60.degree. C. through the peristaltic pump to an appropriate 3 liter collection vessel.

Detailed Description Text (43):
Adjust the substrate flow rate by setting the peristaltic pump from the outlet at a rate of 2 to 4 ml./min. Check the effluent 3 times for the first 24 hours for adjusting the flow rate and then 12 hours thereafter. Sample is allowed to stand at room temperature for 1 hour. Solids concentration of the samples is determined via refractive index. The fractional conversion of glucose to fructose is calculated based on the optical rotation of the glucose substrate and the effluent by polarimetry with confirmation by liquid chromatography to the goal of 42%. A computer program is used

to normalize the collected effluent to 42% fructose and corresponding dry solid per day per gram of the enzyme. Extrapolated dry solid per day per gram of enzyme to zero hour can be obtained if the Modified Immobilized Glucose Isomerase Column (MIGIC) assay is conducted for more than 5 days. The MIGIC unit per gram of the enzyme is equal to the dry solid per day per gram of the enzyme at zero hour multiplied by a factor of 1.619. This factor is equal to: (g. dry solid/day).times.(day/24 hr.).times.(hr./60 min.).times.(0.42 g. fructose/g. dry solid).times.(Mole fructose/180.16 g. fructose).times.(10.sup.6 .mu. Mole/Mole). The total productivity is defined as the accumulated gram dry solids per gram of enzyme for a certain period of time. It can also be expressed as the accumulated gram fructose per gram of enzyme for the period of time.

Detailed Description Text (45):
The data in table V reveals that 5B is superior to 5A in GIU/gm. (19.1% higher), MIGIC (59.4% higher) and half life (6.6% longer). It also shows that 6B is superior to 6A by 17% in terms of GIU/gm., 11.2% higher in terms of MIGIC and 60% longer in half life. The cumulative productivity in the reactor for 5B at the end of 43 days when the test was terminated was 36.7% better than that for 5A while that for 6B at the end of 58 days was 28.7% better than 6A. This example illustrates the advantage of spheronized glucose isomerase particles in extended cumulative productivity over the milled control in 2 separate cases.

Detailed Description Paragraph Table (3):
TABLE IIa

(%) Product Sample and Enzyme Recycled Water Moisture Bulk Increased Particle Filter Cake Cellulose *Binder Fines Added before Density Activity Toughness Size (mesh) (gm) (gm) (gm) (ml) Drying (g/100 ml) (GIU/gm) (%)

2A (-16+24) 1000 -- -- 112 70 68.5 64.9 571 -- 2B (-16+24) 1000 56 -- 56 70 68.0 66.7 520 2.8 2C (-16+24) 1000 56 7 56 70 67.8 76.7 516 174 2D (-16+24) 1000 56 7 56 70 67.8 73.2 525 76 2E (-16+24) 1000 56 7 56 70 67.8 75.6 568 43 2F (-16+24) 1000 56 7 56 70 67.8 74.3 518 65 2G (-16+24) 1000 56 8 56 70 68.6 74.9 536 30 2H (-16+24) 1000 56 7 56 70 67.8 72.3 520 75 2I (-16+48)** 1000 56 7 56 70 67.8 71.8 526 25

*Binder for each sample: 2C sodium alginate, 2D and 2I Locust bean gum; 2E Xanthan gum; 2F Carboxymethylcellulose; 2G Kappa carrageenan; 2H Guar gum **2I was extruded through die with sixty 0.7 mm diameter holes

Detailed Description Paragraph Table (7):
TABLE IVa

Sample and Enzyme Recycled Moisture Product Bulk Increased Particle Filter Binder Fines before Density Activity Toughness Size (mesh) Cake (gm) (gm)* (gm) Drying (%) (g/100 ml) (GIU/gm) (%)

4A (-16+24) 1000 -- 60 67.7 63.8 445 -- 4B (-16+48) 1000 2 15 70.2 81.2 452 77 4C (-16+48) 1000 4 15 70.1 75.8 440 174 4D (-16+48) 1000 2 + 4 15 69.6 80.7 442 175 4E (-16+48) 1000 2 15 70 79.5 450 80 4F (-16+48) 1000 1 + 1 15 70.2 80.6 449 78

*Binder for each sample: 4B Locust bean gum; 4C Sodium alginate; 4D 2 gm Locust bean gum + 4 gm Sodium alginate; 4E Guar gum; 4F Guar and Locust bean gum.

CLAIMS:

2. The method of claim 1 wherein the enzyme producing microorganism is capable of producing glucose isomerase.

10. The method of claim 9 wherein the binder is a natural gum wherein the natural gum is alginate, carrageenan, Guar gum or Locust bean gum.

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L5: Entry 5 of 5 File: USPT Apr 10, 1979

DOCUMENT-IDENTIFIER: US 4148689 A
TITLE: Immobilization of microorganisms in a hydrophilic complex gel

Brief Summary Text (9):
Method for immobilization of microbial cells are classified into four types: support-binding method, crosslinking method, gel-entrapping method, and microcapsule-entrapping method. Among these types, the gel-entrapping method, by which microbial cells are immobilized in the gel matrix, is widely used in practice. The conventional gel entrapping method, however, have the following defects. By the gel formation processes of entrapping microbial cells, their enzymatic activities are apt to be decreased remarkably because the activities are frequently affected by environmental factors such as temperature, pH, ionic strength, pressure and the like. Therefore, a novel gel formation method which does not have any harmful effect on the stability of enzymes has been desired. Many investigations on crosslinking and gelling have been carried out with various polymer compounds from this point of view. However, physical methods for gelling polymers such as lowering the temperature or adding salts or non-aqueous solvents have not been widely employed since it is generally difficult to obtain permanent gels by these reversible gelling reactions. For example, in Japan Kokai Patent Showa 50-52276, it has been disclosed that enzymes can be entrapped inside the gel matrix of polyvinylalcohol polymers by a method wherein enzymes and polyvinylalcohol polymers are solubilized in water and solidified at preferably -25.degree. C. to -80.degree. C. and melted at room temperature to form the gel entrapping enzymes. But the gel prepared by the abovecited patent disclosure were unstable at comparatively high temperatures such as 60.degree. C. or 70.degree. C., which is the reaction temperature range of glucose isomerase. Furthermore, chemical methods for gel matrix formation by crosslinking reagents are too strong and destructive for utilization with biological substances. This is because of the high reactivity of the crosslinking reagents and the high temperature and the extremely high or low pH of the gelling reaction. For example, when polyacrylamide gel-entrapping method is employed, acrylamide monomer is polymerized with N,N'-methylene-bis-acrylamide in the presence of a catalyst such as ammonium persulfate. In this case, the enzyme is often inactivated by the highly reactive catalyst. Therefore the range of pH and temperature of the gelling reaction must be carefully chosen for the maintenance of the enzymatic activities (S. S. Wang: Biotech & Bioeng, 15, 93, (1973)). And further, the gels obtained must be prohibited from the application in the pharmaceutical and food industries because of the possibility of remaining toxic acrylamide monomer. In Japan Kokai Patent Showa 50-53583, it has been disclosed that enzymes can be entrapped inside the gel matrices of polyvinylalcoholic polymers by method wherein enzymes and polyvinylalcoholic polymers are dissolved in water and mixed with boric acid or sodium borate to form the gel-entrapping enzymes. According to the above-cited patent disclosure, enzymes can be immobilized without remarkable denaturation at gelling temperatures below 45.degree. C. However, as the gels are formed only at alkaline pH, this method can be applied only to alkaline-stable-enzymes. The toxicity of boric acid must also be considered. Other crosslinking methods using such high-energy radiation as .gamma.-ray, electron ray or X-ray are difficult of practical application because they require large equipment and precautions must be taken to prevent the physiological effects associated with high-energy rays (ref. H. Maeda; Biotech. & Bioeng., 15, 607 (1973).

Detailed Description Text (8):
3. Other polysaccharides; mannan, dextran, chitosan, pullulan, guar gum, locust bean

gum, tragacanth, xanthangum, agar, sodium arginate.

Detailed Description Text (37):
(D) Isomerases: Glucose isomerase, alanine racemase.

Detailed Description Text (56):
The above-mentioned immobilized microbial cells prepared according to the present invention are stable and maintain this activities for a long period, at least for a year when stored at 10.degree. C., and can be applied to continuous and batch-repeated reactions. For example, the immobilized microbial cells of glucose isomerase can be used without any loss of the activity in a continuous reaction using a column reactor for 30 days. Throughout the long-period continuous process, pressure drops can be ignored even with comparatively high flow rate and with various degrees of ionic strength.

Detailed Description Text (97):
100 parts (weight parts: the same hereinafter) of 10% PVA aqueous solution (polymerization degree: 1,700; and saponification degree: 99.5) were mixed with 231.5 parts of distilled water, 28.5 parts of tetraethoxysilane and 1 part of 1 N HCl, and stirred for more than 2 hours at room temperature, to form a transparent homogenized sol (abbreviated as complex sol) contain 5% of solid parts having a pH of around 3. 5 parts of commercially available microbial cells of glucose isomerase (Nagase Sangyo Co., Ltd.; commercial name: GI-1150, taxonomical name: Streptomyces albus) were suspended in 10 parts of water after shredding the mycelium with a homogenizer at 18,000 rpm for 3 minutes. And then, the prepared suspension was added into 20 parts of the complex sol and dispersed by stirring after the adjustment of pH to 6.0 with 1 N HCl to form a gel. The gel was poured in a petri dish and dried under ventilation at 55.degree. C. and the brown film immobilizing cells was obtained. The film was ground in mortar, and sieved through a 16 mesh sieve to obtain fine granule. The immobilized microbial cells of glucose isomerase thus prepared showed a specific activity of 925 units per gram and the activity of the glucose isomerase was 88% of that of the original cells.

Detailed Description Text (101):
50 g of the immobilized cells of glucose isomerase prepared by the same procedures as described in Example 18 was packed in a 2.5.times.20 cm column maintained at 65.degree. C. (the volume of the immobilized cells was 80 ml), and used for the continuous isomerization reaction of 60% D-glucose solution containing 0.005 M MgSO.sub.4 at pH 7.5, at the flow rate of SV 1, and the reacted solution was collected. The percentage of D-fructose amounts to the solid content of the reacted solution were maintained at around 50% for 30 days, and gradually decreased to less than 25% after 38 days.

Detailed Description Text (104):
The immobilized microbial cells of glucose isomerase activity prepared by the same procedures described in Example 18 were packed in a column reactor and the pressure drops by flowing water according to the method of T. Fukushima et al. ("Immobilized Enzyme Technology", p. 225 (1975) edited by H. Weethall and S. Suzuki, Plenum press, New York--London) were measured. The average diameter of the immobilized microbial cells of glucose isomerase activity was 0.099 cm. The diameter of the column reactor D, was 1.24 cm, and the length of the reaction bed, L, was 6.4 cm. Water was passed at the rate of V=58 cm/hour by up-flow method. It was found that the pressure drop .DELTA.P/L was 0.315 mH.sub.2 O/mBed. The polyacrylamide gel immobilized microbial cells having glucose isomerase used as a control showed pressure drop .DELTA.P/L=5.438 mH.sub.2 O/mBed, under the same conditions.

Detailed Description Text (117):
100 Parts of 10% PVA aqueous solution (polymerization degree: 1,700; saponification degree: 99.5) was mixed with 27 parts of distilled water, 27 parts of tetramethoxysilane and 2 parts of 1 N HCl, and stirred well at room temperature for more than 2 hours to form a homogeneous transparent sol. The prepared sol had 5% solid content. 2 parts of commercial microbial cells of glucose isomerase activity (Nagase Sangyo Co., Ltd., commercial name: GI-1150, taxonomical name: Streptomyces albus) were immobilized in 20 parts of this complex sol by the same procedure described in Example 18. The recovery of the activity through this immobilizing process was 82%.

L3: Entry 1 of 2 File: USPT Aug 15, 1978

DOCUMENT-IDENTIFIER: US 4106987 A
TITLE: Method of isomerizing glucose to fructose

Brief Summary Text (8):
Microbial cells are used as a source of glucose isomerase in the present invention. Glucose isomerase is produced and accumulated during cultivation in the cells of the microorganisms belonging to genus such as Lactobacillus, Pseudomonas, Leuconostoc, Streptmyces, Aerobacter etc. These cells are separated from the culture medium and are immobilized with natural water insoluble gel-forming substance which is at least one member selected from the group consisting of agar-agar, gelatine, collagen, pectin, flour of Amorphophalus Konjac K. Koch, locust bean gum, casein, wheat flour, wheat gluten, soy protein, egg white, tannin, persimmon tannin and starch.